SB608
.P65
F5
No.12

Number 12

Tree Pest Leaflets

THE LARCH CASE-BEARER

(*Coleophora laricella Hbn.*)

Prepared by J. V. SCHAFFNER, JR., Bureau of Entomology and Plant Quarantine, United States Department of Agriculture.

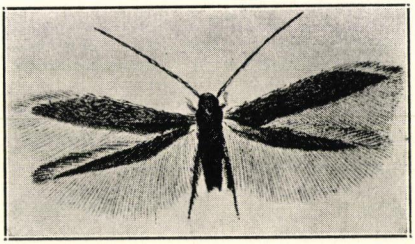

Fig. 1—Larch Case-bearer Adult (much enlarged). (Adapted from Memoir 8. N. Y. State Museum, Plate 18).

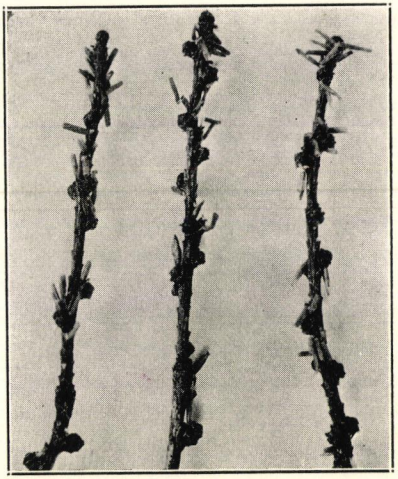

Fig. 2—Larch Case-bearers in hibernation. (Original).

Published for the Cooperators

by the

MASSACHUSETTS FOREST AND PARK ASSOCIATION

3 Joy Street, Boston

July 1937

Library
Forest Service - USDA
370 Reed Rd.
Broomall, Pa. 19008

Issued jointly through cooperation of the following agencies:

The State Foresters, State Departments of Agriculture, State Agricultural Experiment Stations, Extension Services, Forest Schools and Forest and Park Associations of New England and New York, and the Northeastern Forest Experiment Station, the Division of Forest Pathology, Bureau of Plant Industry and the Division of Forest Insect Investigations, Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture.

THE LARCH CASE-BEARER

(*Coleophora laricella Hbn.*)

History and Distribution:—This insect, of European origin, was first recorded in the United States in 1886 at Northampton, Mass., and in 1896 J. G. Jack reported it as having been known in the Arnold Arboretum, Massachusetts, for many years. In 1912, G. W. Herrick recorded that it was becoming a pest of considerable importance in the forests of the northeastern part of the United States. It has now spread throughout most of the range of the larch in the eastern half of the United States and Canada.

For several years it has been a serious pest of both American larch and European larch, particularly in New England and New York.

Host Trees:—American larch (*Larix laricina* (Du Roi) Koch), often called tamarack and hackmatack: European larch (*Larix europaea* D. C.)

Injury:—The young larvae begin feeding in midsummer and usually continue doing so until October, but the injury is seldom conspicuous at this time. Early in the spring they begin their greatest devastation. The inner portions of the leaves are devoured; this causes the foliage to become bleached in appearance and to take on a light brownish color as it shrivels and dries. A moderate infestation may cause the trees to look sickly and unsightly. Complete defoliation of the trees takes place in severe infestations, thus causing retardation of growth, and when this occurs over a period of 2 or more years considerable mortality results.

Description:—The adult (fig. 1) is a delicate little moth, silvery to grayish brown, with narrow wings fringed with long hairs. It has a wing expanse of about three-eighths of an inch.

The eggs are small, though visible with the naked eye, and are reddish brown. Upon magnification they resemble an inverted scalloped jelly mold having 12 to 14 ridges extending from the apex down the sides.

When the larva is full grown it is about three-sixteenths of an inch long, brown, with black head, thoracic shield, and anal plate.

The case is a part of a mined leaf lined with very fine silk, light grayish in color, shaped somewhat like a cigar, and large enough to shelter the larva.

The pupa is brown and is formed in the larval case.

Seasonal History:—In New England there is a single generation each year. The moths issue from the last week in May to the first of July, depending somewhat upon the locality and the season. Normally the greatest activity is during the second and third weeks of June. Oviposition takes place at this time and the eggs are deposited promiscuously on the foliage, one or more to a single leaf.

The larva in hatching bores through that part of the shell next to the leaf, entering the leaf directly from the egg. It feeds within the leaf as a miner until September, when it begins to construct its case either in the original or a newly mined leaf. The larva cuts off the tip of the leaf, cleans out the excrement, lines the inner part with a fine silk, and finally cuts off enough of the mined leaf to make a case large enough for its complete shelter. As the larva grows it enlarges the case, and the action of the larva from within causes the case to become almost cylindrical.

It carries the case about on the hinder part of the body wherever it goes, and on attacking fresh leaves it mines as far as it can reach on each side of the point of entrance without becoming detached from its case.

In October on approach of cold weather the larva, then about one-fourth to one-third grown, migrates from the foliage to a nearby twig or branch, where it fastens its hibernating case securely from within (fig. 2).

As soon as the foliage begins to develop in April the larva again becomes active and migrates to the opening buds to begin its devastation. It attains full growth during the latter half of May and changes to a pupa in the case. Very often the case is fastened in the center of a whorl of foliage.

Thus from the time the larva emerges from the egg to the time it issues as a moth it has a rather protected life, first as a leaf miner and then, from September to about the first of June, as a case-bearer.

CONTROL

Natural Enemies:—Studies conducted by the Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture show that some 18 or 20 species of native parasitic Hymenoptera attack this pest in the northeastern part of United States, but none has ever been recorded as abundant enough to cause any considerable degree of control.

In 1932 the U. S. Department of Agriculture began to import the parasites of this insect from its native habitat in Europe. These have been liberated in infested larch stands in the Northeastern States. Up to the spring of 1936 recoveries of two of the introduced species, *Chrysocharis laricinellae* Ratz. and

Bassus pumilis Ratz., had been made in the vicinity of some of the colonization points in northern New England and New York, thus proving their establishment.

In some localities birds play an important part in the control of this insect. Counts have shown that sometimes as high as 45 percent of the hibernating larvae were removed by birds in one locality, while in others few if any were eaten.

Often there is considerable mortality among the insects during the hibernating period, but this varies in different seasons and localities. Low temperatures do not seriously affect this insect.

ARTIFICIAL CONTROL

a) *In the Forest*:—This insect can be effectively controlled by spraying early in spring before the larvae become active, using a standard liquid lime-sulphur at a rate of 1 part to 9 parts of water. However, in natural forest stands and large plantations the cost of spraying may be prohibitive.

b) *On Shade Trees*:—Spraying as recommended above is the most practical control method for shade trees or ornamentals. It is the only safe and effective means of artificial control that can be recommended at the present time.

REFERENCES

Herrick, Glenn W.—The Larch Case-bearer. Cornell Univ. Agr. Expt. Sta. Bull. 322, pp. 37-56, 1912.

Britton, W. E.—The Larch Leaf-miner or Case-bearer. In Twenty-third Report of the State Entomologist of Connecticut, 1923. Conn. Agr. Expt. Sta. Bull. 256, pp. 288-291, 1924.

Peirson, H. B.—Manual of Forest Insects. Maine Forest Service Bull. 5, pp. 76-78, 1927.